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 NEWS  3  Feb 06  Engineering Information Encompass files have new names
 NEWS  4  Feb 16  TOXLINE no longer being updated
 NEWS  5  Apr 23  Search Derwent WPINDEX by chemical structure
 NEWS  6  Apr 23  PRE-1967 REFERENCES NOW SEARCHABLE IN CAPLUS AND CA
 NEWS  7  May 07  DGENE Reload

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=> s cell denisty and image analysis

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L2             0 CELL DENISTY AND CLASSIFICATION
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=> .

=> s cell and classification and image analysis and tissue

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L3 196 CELL AND CLASSIFICATION AND IMAGE ANALYSIS AND TISSUE

=> s l3 and density

L4 22 L3 AND DENSITY

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L5 16 DUP REM L4 (6 DUPLICATES REMOVED)

=> d l5 bib ab 1-16

L5 ANSWER 1 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 1
AN 2001:216929 BIOSIS
DN PREV200100216929
TI Microvascular development and growth of uterine **tissue** during the estrous cycle in mares.
AU Ferreira-Dias, Graca M. (1); Serrao, Paula M. (1); Durao, Jose F. Costa (1); Silva, Jose Robalo (1)
CS (1) Centro de Investigacao Interdisciplinar em Sanidade Animal, Faculdade de Medicina Veterinaria, Rua Prof. Cid dos Santos Polo Universitario Alto da Ajuda, 1300-477, Lisbon Portugal
SO American Journal of Veterinary Research, (April, 2001) Vol. 62, No. 4, pp. 526-530. print.
ISSN: 0002-9645.
DT Article
LA English
SL English
AB Objective-To document uterine growth and microvascular development in the endometrium of uteri with differing degrees of fibrosis as well as uterine growth throughout the estrous cycle of mares. Animals-30 mares. Procedure-Uterine **tissue** was obtained during the breeding season from a slaughter facility. Stage of estrous cycle of the mares was assessed on the basis of ovarian structures and plasma progesterone concentrations. Endometrium was characterized by use of light microscopy, and blood vessel walls were marked by histochemical techniques. Microvascular development was evaluated by a computerized **image analysis** system. Growth of uterine **tissue** was based on cellular content of DNA and RNA, RNA:DNA, and protein: DNA. Results-Significant differences in vascular **density** were not observed in the endometrium of uteri obtained from mares euthanatized during the follicular or luteal phase of the estrous cycle, regardless of whether endometrial **classification** of degree of fibrosis was considered. There was a 3-fold increase in amount of DNA and RNA of endometrial **cells** in the follicular phase when compared to myometrium. Hypertrophy of endometrial **tissue** during the luteal phase was reflected by a significant increase in **cell** protein content and protein:DNA. Conclusions and Clinical Relevance-Endometrial growth of vascular **tissues** during the estrous cycle may be coordinated with development of nonvascular **tissue**. Estrogen and progesterone may play a role in regulation of uterine growth and angiogenesis.

L5 ANSWER 2 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 2
AN 2000:423342 BIOSIS
DN PREV200000423342
TI Vascular architecture and hypoxic profiles in human head and neck squamous **cell** carcinomas.
AU Wyffels, Kiem (1); Kaanders, Jham; Rijken, P. F. J. W.; Bussink, J.; van den Hoogen, F. J. A.; Marres, Ham; de Wilde, P. C. M.; Raleigh, J. A.; van der Kogel, A. J.
CS (1) Institute of Radiotherapy, University of Nijmegen, 6500 HB, Nijmegen

Netherlands
SO British Journal of Can[illegible], (September, 2000) Vol. 83, N[illegible]5, pp. 674-683.
print.
ISSN: 0007-0920.
DT Article
LA English
SL English
AB Tumour oxygenation and vasculature are determinants for radiation treatment outcome and prognosis in patients with squamous **cell** carcinomas of the head and neck. In this study we visualized and quantified these factors which may provide a predictive tool for new treatments. Twenty-one patients with stage III-IV squamous **cell** carcinomas of the head and neck were intravenously injected with pimonidazole, a bioreductive hypoxic marker. Tumour biopsies were taken 2 h later. Frozen **tissue** sections were stained for vessels and hypoxia by fluorescent immunohistochemistry. Twenty-two sections of biopsies of different head and neck sites were scanned and analysed with a computerized **image analysis** system. The hypoxic fractions varied from 0.02 to 0.29 and were independent from T- and N-**classification**, localization and differentiation grade. No significant correlation between hypoxic fraction and vascular **density** was observed. As a first attempt to categorize tumours based on their hypoxia profile, three different hypoxia patterns are described. The first category comprised tumours with large hypoxic, but viable, areas at distances even greater than 200 mum from the vessels. The second category showed a typical band-like distribution of hypoxia at an intermediate distance (50-200 mum) from the vessels with necrosis at greater distances. The third category demonstrated hypoxia already within 50 mum from the vessels, suggestive for acute hypoxia. This method of multiparameter analysis proved to be clinically feasible. The information on architectural patterns and the differences that exist between tumours can improve our understanding of the tumour micro-environment and may in the future be of assistance with the selection of (oxygenation modifying) treatment strategies.

L5 ANSWER 3 OF 16 MEDLINE
AN 2000511183 MEDLINE
DN 20518416 PubMed ID: 11064813
TI Validation of nuclear texture, **density**, morphometry and **tissue** syntactic structure analysis as prognosticators of cervical carcinoma.
AU Weyn B; Tjalma W; Van De Wouwer G; Van Daele A; Scheunders P; Jacob W; Van Marck E
CS Department of Obstetrics and Gynecology, University of Antwerp, Wilrijk, Belgium.
SO ANALYTICAL AND QUANTITATIVE CYTOLOGY AND HISTOLOGY, (2000 Oct) 22 (5) 373-82.
Journal code: ACQ. ISSN: 0884-6812.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
(VALIDATION STUDIES)
LA English
FS Priority Journals
EM 200102
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered PubMed: 20010131
Entered Medline: 20010215
AB OBJECTIVE: To evaluate the performance of karyometry and histometry in the prediction of survival, recurrence and response of early-stage invasive cervical carcinoma. STUDY DESIGN: Nuclear morphometry, chromatin texture and **tissue** architecture (characterized by syntactic structure analysis) were measured using a semiautomated **image analysis** system on 46 cases of Feulgen-stained **tissue** sections. The performance of the features was compared to that of clinical features, reported to be the best prognosticators until now, such as age, lympho-vascular permeation, histologic type, stage and grade. A K nearest neighbor classifier was used for **classification**. RESULTS: In the prediction of three-year survival, recurrence and response, syntactic

structure analysis proved to be the best performer. **Classification** rates were, respectively, 100%, 94.4% and 94.5%. In all **classifications**, karyometric and histometric features outperformed clinical features. In general, the best performing features described differences in second-order population statistics (standard deviations). CONCLUSION: The results show that a quantitative analysis based on nuclear morphology, chromatin texture and histology can be considered an excellent aid in the prognosis of invasive cervical carcinoma. The measurements are not hampered by the need to undertake complete resections and are suited to daily practice when implemented in a semiautomated **image analysis** system.

L5 ANSWER 4 OF 16 SCISEARCH COPYRIGHT 2001 ISI (R)
AN 2000:819993 SCISEARCH
GA The Genuine Article (R) Number: 367JE
TI Specific changes of chromatin structure in nuclei of normal epithelium adjacent to laryngeal squamous **cell** carcinoma - A preliminary study of 82 cases
AU Dreyer T (Reprint); Knoblauch I; Garner D; Doudkine A; MacAulay C; Palcic B; Popella C
CS UNIV GIESSEN, INST PATHOL, LANGHANSSTR 10, D-35392 GIESSEN, GERMANY (Reprint); BRITISH COLUMBIA CANC AGCY, CANC IMAGING DEPT, VANCOUVER, BC V5Z 4E6, CANADA; UNIV GIESSEN, DEPT OTORHINOLARYNGOL, D-35392 GIESSEN, GERMANY
CYA GERMANY; CANADA
SO ANALYTICAL CELLULAR PATHOLOGY, (OCT 2000) Vol. 20, No. 2-3, pp. 141-150. Publisher: IOS PRESS, NIEUWE HEMWEG 6B, 1013 BG AMSTERDAM, NETHERLANDS. ISSN: 0921-8912.
DT Article; Journal
FS LIFE; CLIN
LA English
REC Reference Count: 47
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The aim of this study was to confirm the existence of specific nuclear texture feature alterations of histologically normal epithelial borders nearby invasive laryngeal cancer (NC).

Paraffin sections of NC and of chronic inflammations unrelated to cancer (CI) were analysed for nuclear texture and for integrated optical **density** (IOD-index) and were compared to normal epithelium of patients without evidence of cancer (NE). Several discriminant functions based on nuclear texture features were trained to separate different subgroups.As the most important result, specific nuclear texture feature shifts were only found in NC with high-**density** lymphocytic stroma infiltrate (NC+). **Classification** of nuclei of NE versus NC+ was correct in 70%. The same classifier was correct in only 58% when nuclei of NE were classified versus CI. We also found lower values of IOD-Index within the NC+ group when compared to NE ($p < 0.001$).

L5 ANSWER 5 OF 16 MEDLINE
AN 2000024271 MEDLINE
DN 20024271 PubMed ID: 10560481
TI Distinguishing cortical adrenal gland adenomas from carcinomas by their quantitative nuclear features.
AU Scarpelli M; Montironi R; Mazzucchelli R; Thompson D; Bartels P H
CS Department of Pathology, University of Ancona, Italy.
NC R 35 CA 53877 (NCI)
SO ANALYTICAL AND QUANTITATIVE CYTOLOGY AND HISTOLOGY, (1999 Apr) 21 (2) 131-8.
Journal code: ACQ; 8506819. ISSN: 0884-6812.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199911
ED Entered STN: 20000111
Last Updated on STN: 20000111
Entered Medline: 19991124
AB OBJECTIVE: To explore data from a set of cases of adrenal cortical adenomas with different endocrine syndromes and carcinomas to determine

whether quantitative **image analysis** of nuclear features might be used to separate the groups. STUDY DESIGN: Fifteen adrenal cortical tumors in which clinical information and optimally preserved, paraffin-embedded **tissue** were available were used. There were 10 adenomas and 5 carcinomas. Among the adenomas, five were associated with primary hyperaldosteronism (Conn's syndrome) and five with Cushing's syndrome. Five-micrometer-thick sections were stained with hematoxylin and eosin. In each case 50 nuclei were measured, and a number of morphometric and densitometric features were extracted. The data were subjected to multivariate analysis. RESULTS: Quantitative analysis showed that nuclei from adrenal carcinomas are larger than those from adenomas. Total optical **density** (OD) had a near-diploid distribution in the adenomas, while it was clearly aneuploid in the carcinomas. The pixel OD histograms were almost identical for all groups. Differences in nuclear chromatin texture were found between adenomas and carcinomas and also between the two adenoma categories. Multivariate analysis showed good discrimination between carcinomas and adenomas (Wilks lambda = .628, P < .0001) and between adenomas. However, based on Bayesian decision boundaries, 20-25% of carcinoma nuclei could be expected to be in the range of adenoma, and about 12% of Cushing's adenoma nuclei and 15% of Conn's adenoma nuclei would be classified as carcinoma. CONCLUSION: Computer-assisted analysis of nuclear characteristics proved useful in identifying and describing differences between groups of tumors arising in the adrenal cortex.

L5 ANSWER 6 OF 16 MEDLINE
AN 97133476 MEDLINE
DN 97133476 PubMed ID: 8978872
TI Breast carcinoma. Correlations between visual diagnostic criteria for histologic grading and features of **image analysis**.
AU Tuczek H V; Fritz P; Schwarzmann P; Wu X; Mahner G
CS Department of Pathology, Marienhospital and Robert Bosch Hospital, Stuttgart, Germany.
SO ANALYTICAL AND QUANTITATIVE CYTOLOGY AND HISTOLOGY, (1996 Dec) 18 (6) 481-93.
Journal code: ACQ; 8506819. ISSN: 0884-6812.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199703
ED Entered STN: 19970327
Last Updated on STN: 19970327
Entered Medline: 19970320
AB OBJECTIVE: To investigate the relevance of **image analysis** for grading breast carcinomas. STUDY DESIGN: The results of histologic grading were correlated with 18 features of **image analysis**, including SD. "Simple" characteristics, like area and perimeter, shape indices, optical **density** and textural features of nuclei from cancer **cells**, were analyzed. Hematoxylin-eosin-stained **tissue** sections of 67 cancer specimens were routinely used for the study. RESULTS: We found statistically significant correlations between overall histologic grading and the sum of its subscores and features of **image analysis**, especially nuclear area, nuclear perimeter and the diameter of the circumscribing circle (diametercirc), including their SDs. The visually and therefore subjectively assessed subscore of the nuclear pleomorphism of histologic grading significantly correlated with the features of **image analysis**, like nuclear area, nuclear perimeter, diametercirc, integrated optical **density** and correlation (and their SDs). There were significant relationships between the absolute numbers of mitoses per 10 high-power fields and nuclear area, nuclear perimeter and diametercirc (and their SDs). We did not observe a significant correlation between the subscore of tubule formation of histologic grading and any of the features of the **image analysis** studied. Furthermore, the correlations between the features of **image analysis** and the subscores of the visual histologic grading system were analyzed with respect to each other. The subscore of nuclear pleomorphism of histologic grading correlated best with overall grading (r

= .72), whereas no significant correlation could be found between the subscores of nuclear polymorphism and mitotic activity. CONCLUSION: **Image analysis** provides objectivity and reproducibility to the grading of breast carcinomas and thus could contribute to more individualized prognostication of the disease.

L5 ANSWER 7 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1996:327815 BIOSIS
DN PREV199699050171
TI Sample preparation and in situ hybridization techniques for automated molecular cytogenetic analysis of white blood **cells**.
AU Van De Rijke, Frans M.; Vrolijk, Hans; Sloos, Willem; Tanke, Hans J.; Raap, Anton K. (1)
CS (1) Dep. Cytochem. Cytometry, Leiden Univ., Wassenaarseweg 72, NL 2333 AL Leiden Netherlands
SO Cytometry, (1996) Vol. 24, No. 2, pp. 151-157.
ISSN: 0196-4763.
DT Article
LA English
AB With the advent of in situ hybridization techniques for the analysis of chromosome copy number or structure in interphase **cells**, the diagnostic and prognostic potential of cytogenetics has been augmented considerably. in theory, the strategies for detection of cytogenetically aberrant **cells** by in situ hybridization are simple and straightforward. In practice, however, they are fallible, because false **classification** of hybridization spot number or patterns occurs. When a decision has to be made on molecular cytogenetic normalcy or abnormally of a **cell** sample, the problem of false **classification** becomes particularly prominent if the fraction of aberrant **cells** is relatively small. In such mosaic situations, often gt 200 **cells** have to be evaluated to reach a statistical sound figure. The manual enumeration of in situ hybridization spots in many **cells** in many patient samples is tedious. Assistance in the evaluation process by automation of microscope functions and **image analysis** techniques is, therefore, strongly indicated. Next to research and development of microscope hardware, camera technology, and **image analysis**, the optimization of the specimen for the (semi)automated microscopic analysis is essential, since factors such as **cell density**, thickness, and overlap have dramatic influences on the speed and complexity of the analysis process. Here we describe experiments that have led to a protocol for blood **cell** specimen that results in microscope preparations that are well suited for automated molecular cytogenetic analysis.

L5 ANSWER 8 OF 16 SCISEARCH COPYRIGHT 2001 ISI (R)
AN 96:354409 SCISEARCH
GA The Genuine Article (R) Number: UH687
TI METHODOLOGICAL ASPECTS OF USING DECISION TREES TO CHARACTERIZE LEIOMYOMATOUS TUMORS
AU DECAESTECKER C; REMMELINK M; SALMON I; CAMBY I; GOLDSCHMIDT D; PETEIN M; VANHAM P; PASTEELS J L; KISS R (Reprint)
CS FREE UNIV BRUSSELS, FAC MED, HISTOL LAB, 808 ROUTE LENNIK, B-1070 BRUSSELS, BELGIUM (Reprint); FREE UNIV BRUSSELS, FAC MED, HISTOL LAB, B-1070 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, INST INTERDISCIPLINARY RES & DEV ARTIFICIAL INTEL, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, FAC MED, HISTOL LAB, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, DEPT PATHOL, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, DEPT PLAST SURG, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, FAC SCI APPL, DEPT DIGITAL & LOG SYST, BRUSSELS, BELGIUM; J BORDET INST, DEPT PATHOL, BRUSSELS, BELGIUM
CYA BELGIUM
SO CYTOMETRY, (01 MAY 1996) Vol. 24, No. 1, pp. 83-92.
ISSN: 0196-4763.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 44
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The aim of the present work is to present the potential uses of a

classification techniq[redacted] labeled the ''decision tree'' f[redacted] tumor characterisation when [redacted]ed with a large number of feat[redacted]s, The decision tree technique enables multifeature logical **classification** rules to be produced by determining discriminatory values for each feature selected, In this report, we propose a methodology that used decision trees to compare and evaluate the information contributed by different types of features for tumor characterisation, This methodology is able to produce a set of hypotheses related to a diagnosis and or prognosis problem, For example, hypotheses can be producted (on the basis of a set of descriptive features) to explain why tumor cases belong to a given histopathological group. To illustrate our purpose, this methodology was applied to the difficult problem of leiomyomatous tumour diagnosis, The aim was to illustrate what kind of diagnostic information can be extracted from a sample data set including 23 smooth muscle tumors (14 benign leiomyomas and 9 malignant leiomyosarcomas) described by a large set of computer-assisted, microscope-generated features, Three groups of features were used relating to: (1) ploidy level determination (10 features), (2) quantitative chromatin pattern description (15 features), and (3) immunohistochemically related antigen specificities (6 features), All these features were quantified by digital **cell image analysis**, The results suggest that an objective distinction between leiomyomas and leiomyosarcomas can be established by means of simple logical rules depending on only a few features among which the immunohistochemically revealed antigen expression of desmin plays a preponderant part, One of the combinations of features proposed by the methodology is interesting for pathologists, because it includes two features describing the appearance of a nucleus in terms of chromatin distribution homogeneity and **density**, two features widely used by pathologists in tumor-grading systems. (C) 1996 Wiley-Liss, Inc.

L5 ANSWER 9 OF 16 SCISEARCH COPYRIGHT 2001 ISI (R)
AN 96:869188 SCISEARCH
GA The Genuine Article (R) Number: VU004
TI Interlaboratory comparison of DNA **image analysis**
AU Thunnissen F B J M (Reprint); Ellis I O; Jutting U
CS UNIV LIMBURG, UNIV HOSP MAASTRICHT, DEPT PATHOL, POB 5800, NL-6202 AZ MAASTRICHT, NETHERLANDS (Reprint); CITY HOSP, DEPT HISTOPATHOL, NOTTINGHAM, ENGLAND; GSF MUNICH, INST PATHOL, MUNICH, GERMANY
CYA NETHERLANDS; ENGLAND; GERMANY
SO ANALYTICAL CELLULAR PATHOLOGY, (OCT 1996) Vol. 12, No. 1, pp. 13-24.
Publisher: ELSEVIER SCI IRELAND LTD, CUSTOMER RELATIONS MANAGER, BAY 15, SHANNON INDUSTRIAL ESTATE CO, CLARE, IRELAND.
ISSN: 0921-8912.
DT Article; Journal
FS LIFE; CLIN
LA English
REC Reference Count: 15
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Interlaboratory quality assurance studies have been conducted for DNA flow cytometry, but not for DNA **image analysis** systems. The purpose of this study was to investigate if concordance of DNA **image analysis** systems existed with respect to **classification** and staining of standardized material. In three separate rounds, human liver **cells** were measured randomly by means of the image cytometry system present in each participating laboratory. The features integrated optical **density** (IOD) and AREA were reported. The relationship between the coefficient of variation (CV) of the 2c and 4c peak were compared with three models. In the three rounds the number of participating laboratories was 11, 14 and II, respectively. Sequential plotting of normalized IOD values yielded useful information about intra-measurement variation. Comparison of measurements in specimens stained in the participating and central laboratory revealed similar CV values. la general, the precision of the instruments, expressed as the 4c/2c and 8c/2c ratios was good. The accuracy of the different laboratories expressed as the CV of IOD for the three rounds Varied from 2-17%. The relation of the CVs of the 2c and the 4c peaks was best fit with the model of the addition of two normal distributions. We conclude that interlaboratory comparison of DNA measurements performed on different instruments is certainly feasible and could facilitate improvement in

quality standards.

L5 ANSWER 10 OF 16 MEDLINE
AN 96065086 MEDLINE
DN 96065086 PubMed ID: 7485398
TI Phenotypic analysis of pulmonary perivascular mononuclear infiltrates that occur as a direct result of acute lethal graft-versus-host disease describes the onset of interstitial pneumonitis.
CM Erratum in: Am J Pathol 1996 Feb;148(2):678
AU Workman D L; Clancy J Jr
CS Department of Cell Biology, Neurobiology, and Anatomy, Loyola University Chicago, Maywood, Illinois 60153, USA.
NC AI-12738 (NIAID)
SO AMERICAN JOURNAL OF PATHOLOGY, (1995 Nov) 147 (5) 1350-60.
Journal code: 3RS; 0370502. ISSN: 0002-9440.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199512
ED Entered STN: 19960124
Last Updated on STN: 19980206
Entered Medline: 19951219
AB We recently determined that the sequential development of interstitial pneumonitis and lymphocytic bronchiolitis/bronchitis occurs as a direct result of acute lethal graft-versus-host disease. Interstitial pneumonitis develops before lymphocytic bronchiolitis/bronchitis primarily from the dissemination of perivascular mononuclear infiltrates. We have used the adult, nonirradiated (DA x LEW) F1 hybrid rat in the absence of chemotherapy, immunosuppression, or overt infection to determine the phenotype of infiltrating perivascular mononuclear **cells** throughout acute lethal graft-versus-host disease. F1 animals were intravenously injected with 1 x 10(6) DA parental lymphoid **cells** /g body weight, which produced 100% morbidity and mortality by day 21. Graft-versus-host disease animals were killed on days 3, 7, 10, 14, and 15 to 21 after injection. Whole left lung lobes were frozen, serially sectioned (4 microns), and incubated with a panel of mouse anti-rat monoclonal antibodies. Labeled antibody **density** was determined by computerized **image analysis**. Perivascular infiltration was observed first for ED1+, OX8+, and W3/25+ **cells** , and then OX41+, W3/13+ and OX19/25+ populations. OX6 was expressed in control **tissues** and at all time points tested. OX12+, OX39+ and MOM/3F12/F2+ **cells** were not quantifiable. The present study has determined that the process of perivascular infiltration was produced through a biphasic influx of OX6+, T-**cell**, and macrophage populations.

L5 ANSWER 11 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 3
AN 1995:202135 BIOSIS
DN PREV199598216435
TI Frozen Section Microautoradiography in the Study of Radionuclide Targeting: Application to Indium-111-Oxine-Labeled Leukocytes.
AU Puncher, Matthew R. B.; Blower, Philip J. (1)
CS (1) Nuclear Med. Dep., Kent Canterbury Hosp., Canterbury, CT1 3NH UK
SO Journal of Nuclear Medicine, (1995) Vol. 36, No. 3, pp. 499-505.
ISSN: 0161-5505.
DT Article
LA English
AB The microscopic biodistribution of radioactivity in **tissues** is important in determining microdosimetry. This study addresses the use of frozen section microautoradiography in studying the subcellular distribution of 111In in leukocytes labeled with 111In-oxine. Methods: In conjunction with frozen section microautoradiography, computer **image analysis** methods were applied to the analysis and quantification of leukocyte sections and superimposed autoradiographs. Rapid **cell** fractionation was used to confirm the results. Results: The emulsion (Ilford K2) response was linear over the concentration range investigated (0-33 MBq ml-1). Resolution of radionuclide distribution was better than 2 mu-m. The autoradiographs

showed no dependence of radiolabel uptake on **cell** type. **Classification** of all **cells** into intervals according to grain **density** suggests an exponential rather than normal distribution, with approximately 50% of **cells** having little or no radiolabel. In any one sample, **cells** which were heavily labeled were approximately 10 times more likely to be found in aggregates (60% found in aggregates, mostly neutrophils) than **cells** which were not heavily labeled (6% found in aggregates); and the grain **densities** were at least twofold higher over nuclei than over cytoplasm. The last observation was confirmed by the rapid **cell** fractionation method which showed that approximately 57% of the total radioactivity was bound to nuclei. Conclusion: Frozen section microautoradiography is a practical and reliable approach to determining sub-cellular distribution of 111In. The radiolabeling process causes aggregation of neutrophils. Uptake is not significantly dependent on **cell** type, but only a fraction of **cells** are appreciably labeled. The radioactive concentration in **cell** nuclei is at least two-fold higher than in cytoplasm. Microautoradiography can be used to provide distribution data as input into computer models for sub-cellular dosimetry.

L5 ANSWER 12 OF 16 MEDLINE
AN 95168377 MEDLINE
DN 95168377 PubMed ID: 7864163
TI Branching points of renal resistance arteries are enriched in L-type calcium channels and initiate vasoconstriction.
AU Goligorsky M S; Colflesh D; Gordienko D; Moore L C
CS Department of Medicine, State University of New York at Stony Brook 11794-8152.
NC DK-26341 (NIDDK)
DK-41573 (NIDDK)
RR-05736 (NCRR)
SO AMERICAN JOURNAL OF PHYSIOLOGY, (1995 Feb) 268 (2 Pt 2) F251-7.
Journal code: 3U8; 0370511. ISSN: 0002-9513.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199503
ED Entered STN: 19950404
Last Updated on STN: 19950404
Entered Medline: 19950320
AB The morphologic structures responsible for the drop in blood pressure along the preglomerular vasculature are not completely defined. Theoretical and videomicroscopic analyses of nonrenal vascular beds implicate bifurcations of resistance arteries as important sites of hemodynamic regulation. These structures contain pacemaker **cells** sensitive to calcium channel blockers and appear to initiate vasomotion. In the present study, we examined the possibility of functional diversity of smooth muscle **cells** along resistance arteries with regard to the **density** of voltage-gated L-type calcium channels. Staining of microdissected renal resistance arteries with Bodipy-labeled dihydropyridine and analysis by confocal microscopy showed enhanced binding at branching points compared with the distal sites in daughter vessels. Antibodies directed against the alpha 1-subunit of the dihydropyridine-sensitive calcium channels confirmed the enhanced expression of L-type channels predominantly at the sites of bifurcations of renal resistance arteries. Fluorescence digital-**image** **analysis** of freshly microdissected branches of cortical radial (interlobular) and arcuate arteries intravitally labeled with a calcium indicator, fluo 3, identified branching points as initiator sites of depolarization-induced intracellular Ca2+ concentration ([Ca2+]i) transients, which propagated along the vascular wall at the rate of 2.0 +/- 0.7 micron/s. Videomicroscopy of blood-perfused rat juxtamedullary resistance arteries showed that branching points exhibit more pronounced contractile responses to KCl-induced depolarization than distal sites along the daughter vessels. Collectively, these results demonstrate that branching points are enriched in L-type calcium channels, a finding that suggests these structures may serve as important regulators of renal

hemodynamics.

L5 ANSWER 13 OF 16 MEDLINE DUPLICATE 4
AN 95068610 MEDLINE
DN 95068610 PubMed ID: 7526719
TI Computer-assisted **image analysis** of tumor sections for a new thrombospondin receptor.
AU Arnoletti J P; Albo D; Jhala N; Granick M S; Solomon M P; Atkinson B; Rothman V L; Tuszynski G P
CS Department of Surgery, Medical College of Pennsylvania, Philadelphia 19129.
SO AMERICAN JOURNAL OF SURGERY, (1994 Nov) 168 (5) 433-6.
Journal code: 3Z4; 0370473. ISSN: 0002-9610.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199412
ED Entered STN: 19950110
Last Updated on STN: 19960129
Entered Medline: 19941207
AB BACKGROUND: A **cell** surface receptor (50 kd) has been recently identified in malignant **cells** that recognizes the tumor **cell** adhesive domain (ie, cysteine-serine-valine-threonine-cysteine-glycine [CSVTCG]) of thrombospondin (TSP). This CSVTCG-specific TSP receptor can be considered as a new tumor marker, and its concentration on the **cell** surface may correlate directly with the capacity of tumor **cells** to invade and metastasize. MATERIALS AND METHODS: Six patients with primary, stages III and IV squamous **cell** carcinomas of the head and neck were studied. Tumor sections were specifically stained for this receptor with immunohistochemical techniques. The stained specimens were then subjected to computer-assisted **image analysis**. The area of positive staining and the heterogeneity of the pattern of staining were compared to peritumoral angiogenesis and clinical outcome of the patients. RESULTS: The results indicate that those patients with a high and homogenous positive stain score (mean +/- standard error [SE] 78 +/- 5%) for the CSVTCG-specific TSP receptor had high microvessel **density** and died from metastatic disease within 12 months of initial treatment (correlation coefficients = 0.95 and 1, respectively). Patients with a low and heterogenous positive stain score for receptor (mean +/- SE 8 +/- 2%; $P < 0.001$) had low microvessel counts and remained disease-free for at least 2 years. There was no relationship between receptor **density** and histologic **classification** of the primary tumors. CONCLUSION: The CSVTCG-specific TSP receptor, quantified through **image analysis** of immunohistochemical stained **tissue** sections, is highly predictive of clinical outcome in patients with squamous **cell** carcinomas of the head and neck.

L5 ANSWER 14 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1993:230606 BIOSIS
DN PREV199395121781
TI Method for counting mitoses by image processing in Feulgen stained breast cancer sections.
AU Ten Kate, T. K.; Belien, J. A. M.; Smeulders, A. W. M.; Baak, J. P. A. (1)
CS (1) Dep. Pathology, Free Univ. Hosp., de Boelelaan 1117, 1007 MB Amsterdam, The Netherlands
SO Cytometry, (1993) Vol. 14, No. 3, pp. 241-250.
ISSN: 0196-4763.
DT Article
LA English
AB This study describes an image processing method for the assessment of the mitotic count in Feulgen-stained breast cancer sections. The segmentation procedure was optimized to eliminate 95-98% of the nonmitoses, whereas 11% of the mitoses did not survive the segmentation procedure. Contour features and optical **density** measurements of the remaining objects were computed to allow for **classification**. Twelve specimens were analyzed, nine used to serve as a training set, and three put aside for later use as independent test set. The fully automatic image

processing method correctly classified 81% of the mitoses at the specimen level while inserting [redacted] false positives. The automatic procedure strongly correlated with the interactive counting procedure (r=0.98). Although the fully automatic method provided satisfactory results, it is not yet suited for clinical practice. The autamated method with an interactive evaluation step gave an accurate reflection of the mitotic count showing an almost perfect correlation with the results of the interactive morphometry (r=0.998). Therefore this semiautomated method may be useful as prescreening device.

L5 ANSWER 15 OF 16 MEDLINE
AN 92316470 MEDLINE
DN 92316470 PubMed ID: 1618471
TI Changes of IgG-bearing **cell** populations in the portal tracts of patients with chronic liver disease of viral etiology: an evaluation by immunoperoxidase method and computerized **image analysis**
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AU Torgano G; Vecchi M; Arosio E; Santambrogio D; Ronchi G; Annoni G; Tomasini M; Contessini E; de Franchis R
CS Department of Internal Medicine, University of Milano, Italy.
SO HEPATOLOGY, (1992 Jul) 16 (1) 19-23.
Journal code: GBZ; 8302946. ISSN: 0270-9139.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199208
ED Entered STN: 19920815
Last Updated on STN: 19920815
Entered Medline: 19920803
AB Little is known about the distribution of IgG-bearing **cell** subpopulations in normal liver and their possible changes in disease conditions. We developed an immunohistochemical method that proved suitable and accurate for the identification and characterization of IgG-bearing **cells** and their subpopulations in liver specimens. The method uses specific monoclonal antibodies on serial mirror liver sections. We applied this method to four normal liver **tissue** specimens and 25 liver biopsy samples of chronic hepatitis of viral etiology. Only rare IgG-bearing **cells** could be observed in the portal tracts of normal liver specimens. In contrast, a dense infiltrate of such **cells** was seen in liver specimens from patients with chronic viral hepatitis. The **density** of IgG-bearing **cells** in such patients ranged from 6 to 20 **cells** x 10(-4) micron2 in the different specimens (mean = 11 x 10(-4) micron2). The increase in IgG-bearing **cells** did not appear to be related to the histological diagnosis, to the degree of histological inflammatory activity or to the type of viral infection. The major population of IgG-bearing **cells** consisted of IgG1-positive **cells** (68%); IgG2- (17%), IgG3- (8%) and IgG4 (7%)-bearing **cells** represented only minor fractions. The increased prevalence of IgG1-bearing **cells** observed in chronic hepatitis but not in normal liver specimens suggests that these findings may reflect an activation of antibody production directed toward viral antigens or antigenic structures of self. The identification of the antigenic specificities of the antibodies produced by IgG-bearing **cells** might provide important clues in understanding the pathogenesis of chronic viral hepatitis.

L5 ANSWER 16 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1991:392904 BIOSIS
DN BA92:70219
TI ASSESSEMENT OF **CELL** PROLIFERATION ON POROUS MICROCARRIERS BY MEANS OF **IMAGE ANALYSIS**.
AU FORAN D J; CAHN F; EIKENBERRY E F
CS DEP. PATHOL., ROBERT WOOD JOHNSON MED. SCH., UNIV. MED. DENTISTRY NEW JERSEY, PISCATAWAY, N.J. 08854.
SO ANAL QUANT CYTOL HISTOL, (1991) 13 (3), 215-222.
CODEN: AQCHED. ISSN: 0884-6812.
FS BA; OLD
LA English

AB Spherical porous microcarriers (PMCs) made from collagen-glycosaminoglycan crosslinked copolymers have exhibited considerable promise as growth surfaces for the proliferation of anchorage-dependent mammalian **cell** lines and have demonstrated the ability to entrap anchorage-independent **cells**. However, quantification of **cell** growth on PMCs has proved difficult. A method of measuring the proliferation of PMCs, based on **image analysis**, is presented. Using CV1 and CHO **cell** lines, samples of PMCs were removed from culture at various times, fixed, embedded and sectioned. The 2 .mu.m sections were stained, photographed and digitized in three colors. A computer program was developed to evaluate digitized PMC cross-sections and to classify pixels as conforming to either background, cytoplasmic, matrix or nuclear parameters, based on a set of **classification** rules determined by statisticl analysis. Growth curves were generated by relating the number of pixels occupied by cellular material to the total number of pixels in the PMC cross-section. The PMCs were found to foster **cell** proliferation, with **cell densities** approaching 100% occupancy.

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(FILE 'HOME' ENTERED AT 20:47:44 ON 22 MAY 2001)

FILE 'BIOSIS, CAPLUS, MEDLINE, SCISEARCH' ENTERED AT 20:48:11 ON 22 MAY 2001

L1	0	S	CELL DENISTY AND IMAGE ANALYSIS
L2	0	S	CELL DENISTY AND CLASSIFICATION
L3	196	S	CELL AND CLASSIFICATION AND IMAGE ANALYSIS AND TISSUE
L4	22	S	L3 AND DENSITY
L5	16	DUP	REM L4 (6 DUPLICATES REMOVED)

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